

REMARKS

Applicants amend claims 1 and 4. Claims 1, 3, 4, 6 and 7 are pending, of which claims 1 and 4 are independent. No new matter has been added. Support for the claim amendments can be found at least in Applicants' Figure 2. Applicants respectfully submit that the pending claims define over the art of record.

Rejection of Claims 1, 3, 4, 6 and 7 under 35 U.S.C. §112

Claims 1, 3, 4, 6 and 7 are rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. More specifically, the Examiner points to language in claims 1 and 4 which reads "wherein said oxygen is supplied to said ATR separately from said water."

Applicants amend claims 1 and 4 to recite "wherein said oxygen is supplied to said reforming mechanism separately from said water." As illustrated in Applicants' Figure 2, air and water are supplied separately to the reforming mechanism 20. As such, Applicants respectfully request that the 35 U.S.C. §112, first paragraph, rejection of claims 1, 3, 4, 6 and 7 be withdrawn. Reconsideration and allowance of claims 1, 3, 4, 6 and 7 is requested in view of the above remarks.

Rejection of Claims 1, 3, 4, 6 and 7 under 35 U.S.C. §103

Claims 1, 3, 4, 6 and 7 are rejected under 35 U.S.C. §103(a) as being unpatentable over United States Patent Publication Number 2003/0046867 to Woods (hereafter "Woods") in view of United States Patent Publication Number 2003/0008186 to Dickman (hereafter "Dickman") and United States Patent Publication Number 2004/0146821 to Joshi (hereafter "Joshi").

Applicants respectfully submit that the Woods, Dickman and Joshi references, alone or in any combination, fail to teach or suggest at least the following feature of amended independent claims 1 and 4: "said off-gas tank is coupled to said evaporator."

The Woods reference relates to systems for generating hydrogen gas for use industrial and fuel cell applications. A first input is provided for mixing a stream of liquid water with a

stream of feed gas to produce a feed gas-water mixture stream (Woods, abstract). The feed gas-water mixture stream is heated to produce a humidified feed-gas stream (Woods, abstract). A second input is provided for mixing the humidified feed-gas stream with a hydrocarbon fuel to produce a reformer reactant mixture of fuel, oxidant and steam (Woods, abstract).

Applicants respectfully submit that the Woods reference fails to teach or suggest “said off-gas tank is coupled to said evaporator,” as recited in claims 1 and 4. The Examiner admits that the Woods reference, even if modified by the Dickman reference, fails to teach the off-gas tank recited in claims 1 and 4 (Office Action, paragraph 4). The Woods reference does not teach or suggest an off-gas tank connected to a PSA mechanism and coupled to an evaporator. As such, the Woods reference does not teach or suggest that said off-gas tank is coupled to said evaporator, which is required by claims 1 and 4.

In view of the foregoing arguments, Applicants respectfully submit that the Woods reference does not teach or suggest each and every feature of claims 1 and 4. The addition of the Dickman and Joshi references fails to cure this deficiency.

The Dickman reference relates to a feedstock mixing apparatus for fuel processing systems. The fuel processing system includes one or more fuel processors adapted to produce a product hydrogen stream from a feed stream containing water and a carbon-containing feedstock (Dickman, abstract). The fuel processing system may also include one or more fuel cell stacks that are adapted to produce an electric current from the product hydrogen stream produced by the fuel processing system (Dickman, abstract).

Applicants respectfully submit that the Dickman reference fails to teach or suggest “said off-gas tank is coupled to said evaporator,” as recited in claims 1 and 4. The Examiner admits that the Dickman reference fails to teach the off-gas tank recited in claims 1 and 4 (Office Action, paragraph 4). The Dickman reference does not teach or suggest that the reforming region 32 includes an evaporator, or that the purification region 38 includes an off-gas tank coupled to an evaporator (Dickman, Figure 15). The Dickman reference does not teach or suggest an off-gas tank connected to a PSA mechanism and coupled to an evaporator. As such, the Dickman reference does not teach or suggest that said off-gas tank is coupled to said evaporator, which is required by claims 1 and 4.

In view of the foregoing arguments, Applicants respectfully submit that the Woods and Dickman references do not teach or suggest each and every feature of claims 1 and 4. The addition of the Joshi reference fails to cure this deficiency.

The Joshi reference relates to a slotted injection nozzle which may be used to inject secondary fuel in a burner system (Joshi, abstract). The Joshi reference discusses recycling combustible waste gas from a PSA system to a reformer as additional or secondary fuel (Joshi, paragraph 4). A surge tank is used to even out cyclic pressure fluctuations in the waste gas output from the PSA (Joshi, paragraph 4).

Applicants respectfully submit that the Joshi reference fails to teach or suggest “said off-gas tank is coupled to said evaporator,” as recited in claims 1 and 4. The Examiner points to the surge tank in the Joshi reference as teaching the off-gas tank recited in claims 1 and 4 (Office Action, paragraph 4). Applicants respectfully disagree because the Joshi reference merely discusses injection nozzles for burners, and does not contain any teaching or suggestion for coupling an off-gas tank to an evaporator, as required by claims 1 and 4.

The cited portion of the Joshi reference is directed to steam methane reforming (SMR) (Joshi, paragraph 4). The surge tank is connected to the reformer furnace burners (Joshi, paragraph 4). The reformer furnace burners are used to supply heat to a steam reforming (SR) type of reformer furnace, and have nothing to do with an evaporator. The Joshi reference does not contain any teaching or suggestion that the surge tank is coupled to an evaporator. The Joshi reference does not teach or suggest an off-gas tank connected to a PSA mechanism and coupled to an evaporator. As such, the Joshi reference does not teach or suggest that said off-gas tank is coupled to said evaporator, which is required by claims 1 and 4.

In view of the foregoing arguments, Applicants respectfully submit that the Woods, Dickman and Joshi references, alone or in any combination, fail to teach or suggest each and every feature of independent claims 1 and 4. Furthermore, the Woods, Dickman and Joshi references do not provide any motivation that would have led one of ordinary skill in the art to modify their teachings to arrive at Applicants’ invention. The teachings of the Woods, Dickman and Joshi references cannot be combined to yield “said off-gas tank coupled to said evaporator” recited in claims 1 and 4, because the references do not address this feature at all.

As such, Applicants respectfully submit that claims 1 and 4 define over the art of record. Applicants respectfully request reconsideration and withdrawal of the U.S.C. §103(a) rejection of claims 1 and 4.

Claim 3 depends upon claim 1, and adds separate and patentable limitations to claim 1. Claims 6 and 7 depend upon claim 4, and add separate and patentable limitations to claim 4. As such, for this and the reasons set forth above, Applicants respectfully submit that the dependent claims also define over the art of record.

CONCLUSION

In view of the foregoing amendments and arguments, Applicants believe the pending application is in condition for allowance.

Applicants believe that no fee is due with this statement. However, if a fee is due, please charge our Deposit Account No. 12-0080, under Order No. TOW-067RCE from which the undersigned is authorized to draw.

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Respectfully submitted,

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